

## SUPPLEMENTARY APPENDIX

### SUPPLEMENTARY METHODS

#### *Choice of disease assessments periods*

Switzerland had a population of 8'619'259 people in the first quarter of 2020. The first patient with confirmed SARS-CoV-2 infection in Switzerland was detected on February 24, 2020. Facing increasing numbers of infections in the following weeks in March (Fig. 1), the Swiss Federal Council issued a decree that defined measures to combat the virus, including calls for residents to largely stay at home (no absolute home confinement introduced at any time), prohibition of gatherings of >5 people, social distancing of at least 2 meters, closure of schools, universities and public places (excluding pharmacies and food stores). This decree was adapted on March 19th, 2020, to stipulate that medical investigations and treatments that were not urgently needed would be forbidden (lockdown phase, as indicated in Figure 1). The measure was thought to ensure sufficient capacities to provide care to increasing number of COVID-19 patients and to decrease potential additional infections by shifting a significant number of face-to-face visits to phone consultations or other options of remote interaction. The definition of not urgently needed interventions encompassed those treatments that could be deferred to a later time-point without leading to disadvantages that exceeded small physical or psychological complaints and impairments. Regular medical consultations were allowed again beginning of April 27<sup>th</sup>, 2020, as the number of new infections declined (Fig. 1). This was followed by several reopening phases from the partial lockdown beginning of May and June 2020. Importantly, the COVID-19 phase of interest in our study is of longer duration than the strict period of partial lockdown, as patients began to cancel their scheduled appointments with rheumatologists as soon as infection numbers started to raise (beginning of March 2020). The number of patients with confirmed SARS-CoV-2 infection in Switzerland on June 30, 2020, was 31'817.

### *Informations provided to SCQM patients during the pandemic*

Patients participating in the SCQM cohorts were informed via email on March 19<sup>th</sup>, 2020, that they could additionally enter data on symptoms potentially associated with SARS-CoV2 infection via the app and patients not using the app were motivated to activate this feature. A reminder was sent by email on April 1st, 2020. Moreover, some institutions contacted patients not using the remote application by smartphone so far and provided direct information on benefits of its use, particularly during the period of medical lockdown. Given uncertainties about use of disease-modifying anti-rheumatic drugs (DMARDs) and of non-steroidal anti-rheumatic drugs (NSAIDs) during the COVID-19 pandemic the recommendation of the Swiss Rheumatology Society to not preventively discontinue DMARD or NSAID treatments during the pandemic was loaded on its homepage and sent to all rheumatologists via email on March 26<sup>th</sup>. Similar information was already provided to patients, patient associations and rheumatologists starting at the end of February 2020 by major academic rheumatology centres.

### *Non-compliance with prescribed DMARD medication*

Patients are asked the following question regarding the DMARDs prescribed by the rheumatologist and entered in the database by the rheumatologist during the monthly app entry: Do you take the following medication regularly? Several answers are possible after the mention of the specific medication: a) yes; b) yes, but in another dosage/at other intervals; c) currently not; d) no; e) the information is not correct. Any answer except “yes” was considered as non-compliance with prescribed medication.

## SUPPLEMENTARY RESULTS

**Supplementary Table S1.** Comparison of patients followed during the COVID-19 wave and patients with at least 1 visit during the last 18 months at inclusion in SCQM.

| Disease      | Parameter           | All SCQM patients | COVID-19 wave study subset | P Value* |
|--------------|---------------------|-------------------|----------------------------|----------|
| <b>AxSpA</b> | N                   | 1991              | 287                        |          |
|              | Age, y              | 41.9 (12.4)       | 41.7 (11.4)                | 0.85     |
|              | Disease duration, y | 5.9 (8.4)         | 5.8 (8.5)                  | 0.86     |
|              | BASDAI              | 4.4 (2.3)         | 4.3 (2.2)                  | 0.50     |
| <b>RA</b>    | N                   | 2888              | 248                        |          |
|              | Age, y              | 53.4 (13.4)       | 48.8 (13.3)                | <0.001   |
|              | Disease duration, y | 5.4 (18.6)        | 5.6 (7.3)                  | 0.90     |
|              | RADAI-5             | 3.6 (2.1)         | 3.2 (2.0)                  | 0.003    |
| <b>PsA</b>   | N                   | 1156              | 131                        |          |
|              | Age, y              | 49.3 (12.2)       | 47.3 (10.8)                | 0.09     |
|              | Disease duration, y | 5.6 (7.9)         | 6.2 (8.6)                  | 0.41     |
|              | PGA                 | 4.4 (2.9)         | 4.7 (2.8)                  | 0.46     |

\*The Kruskal test was used to compare the two groups. Mean (SD) values are shown. AxSpA = axial spondyloarthritis; BASDAI = Bath Ankylosing Spondylitis Disease Activity Index; N = number of patients; PGA = Patient Global Assessment of disease activity; PsA = psoriatic arthritis; RA = rheumatoid arthritis; RADAI-5 = Rheumatoid Arthritis Disease Activity Index-5; SCQM = Swiss Clinical Quality Management; y = years.

### *Overall course of disease activity between January 2019 to June 2020*

Mean and median disease activity values collected during all clinical visits in the SCQM cohorts in the mentioned period is shown for each rheumatic disease at monthly intervals in the supplementary Figure S1. While a gradual numerical increase in BASDAI was observed with the beginning of the lock-down phase in axSpA, this pattern of disease activity course was not noticed in RA or PsA. Moreover, monthly variations of disease activity of similar amplitude were observed throughout the previous year for all three rheumatic diseases. The course of disease activity assessed during app entries was more homogenous over time (supplementary figure S2).

**Supplementary Figure Legends**

**Supplementary Figure S1.** Monthly disease activity values collected during face-to-face consultations in patients with (A) axial spondyloarthritis, (B) rheumatoid arthritis and (C) psoriatic arthritis from January 2019 to June 2020. BASDAI = Bath Ankylosing Spondylitis Disease Activity Index; m = mean disease activity; n = number of patients; PGA = Patient Global Assessment of disease activity; RADAI-5 = Rheumatoid Arthritis Disease Activity Index-5.

**Supplementary Figure S2.** Monthly disease activity values collected through remote app entries in patients with (A) axial spondyloarthritis, (B) rheumatoid arthritis and (C) psoriatic arthritis from January 2019 to June 2020. BASDAI = Bath Ankylosing Spondylitis Disease Activity Index; m = mean disease activity; n = number of patients; PGA = Patient Global Assessment of disease activity; RADAI-5 = Rheumatoid Arthritis Disease Activity Index-5.



